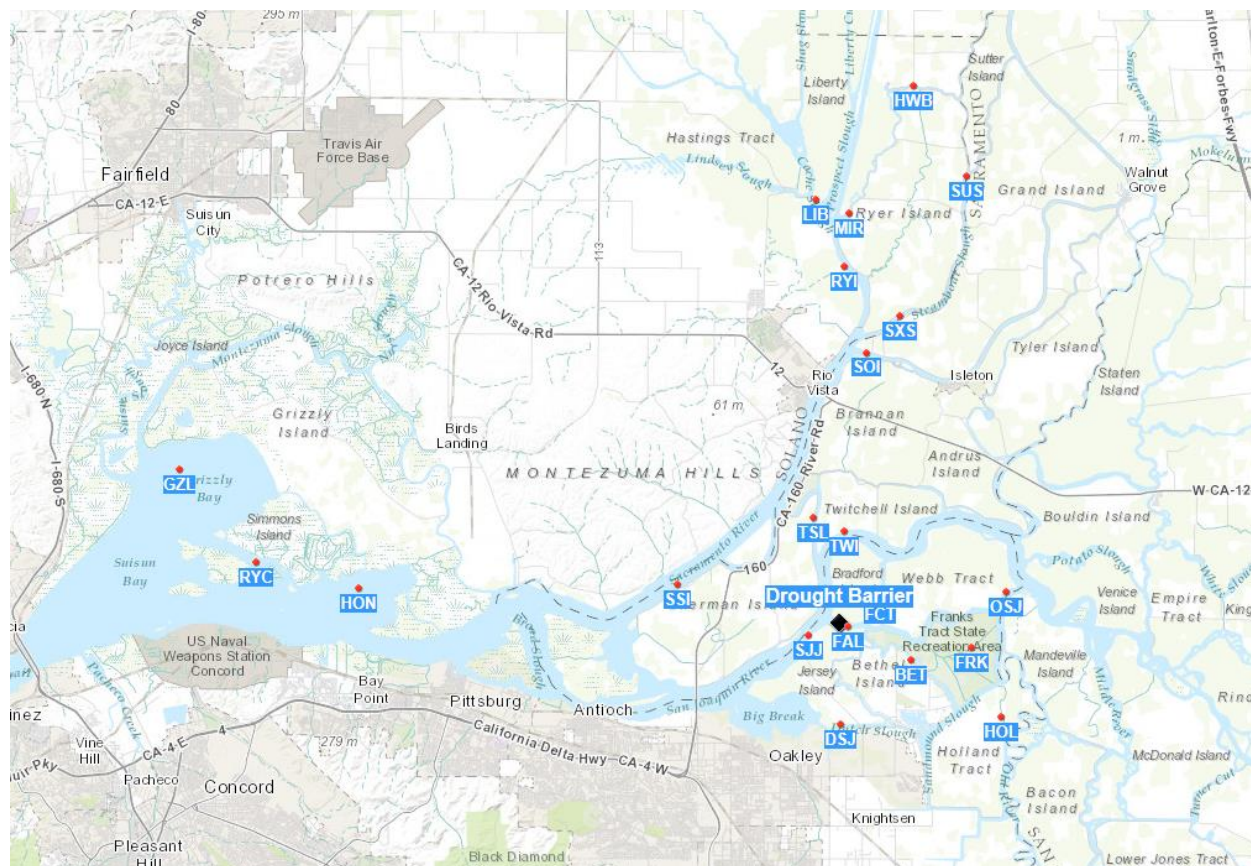


# Emergency Drought Barrier Water Quality Monitoring Summary <sup>1</sup>

## Weekly Update for August 10 through August 16, 2015

Below is a summary of water quality, flow, and velocity data since the hydraulic closure of the Emergency Drought Barrier (EDB) at West False River on May 28, 2015, with emphasis on trends observed during the past week. The EDB rock placement was completed on June 12, 2015. For additional water quality monitoring data, access the network of CDEC stations at the following link:

<http://dwr.maps.arcgis.com/apps/Viewer/index.html?appid=3be5e0bbe0994b76883b0567f4f6b9e3>

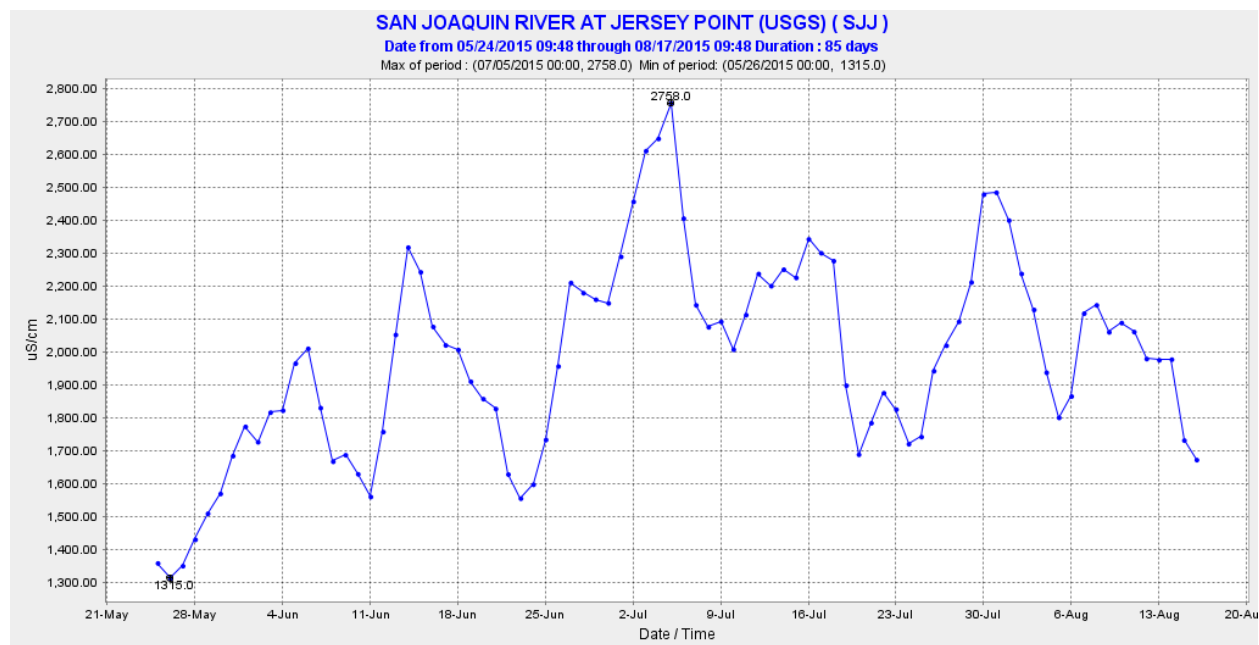
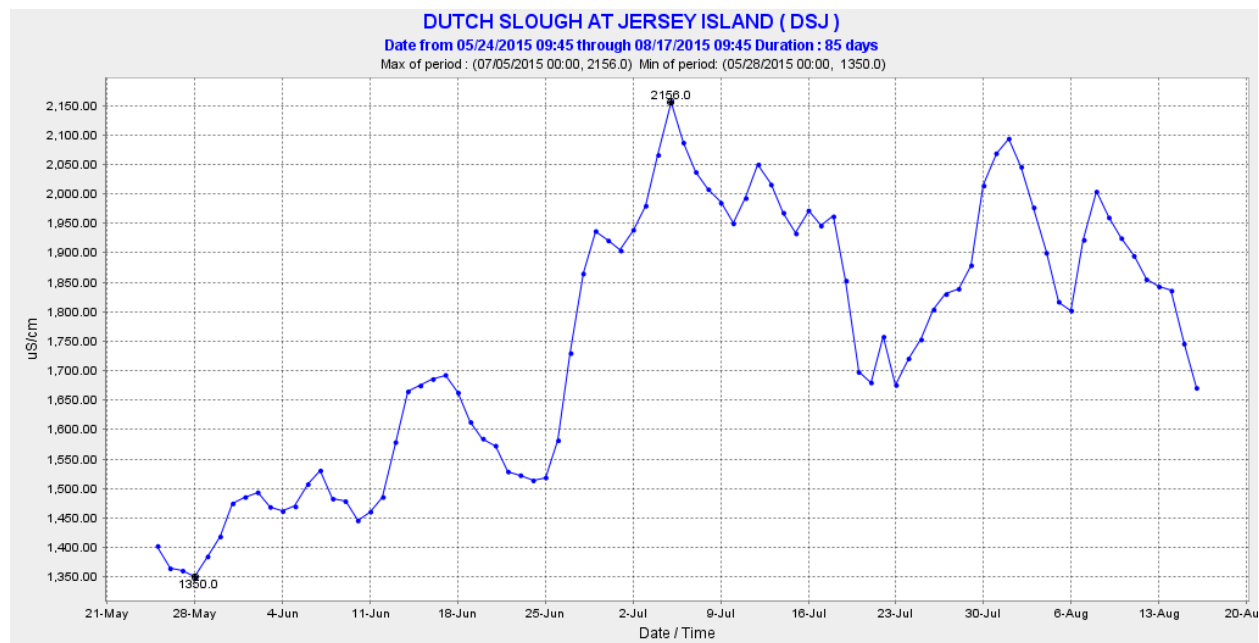


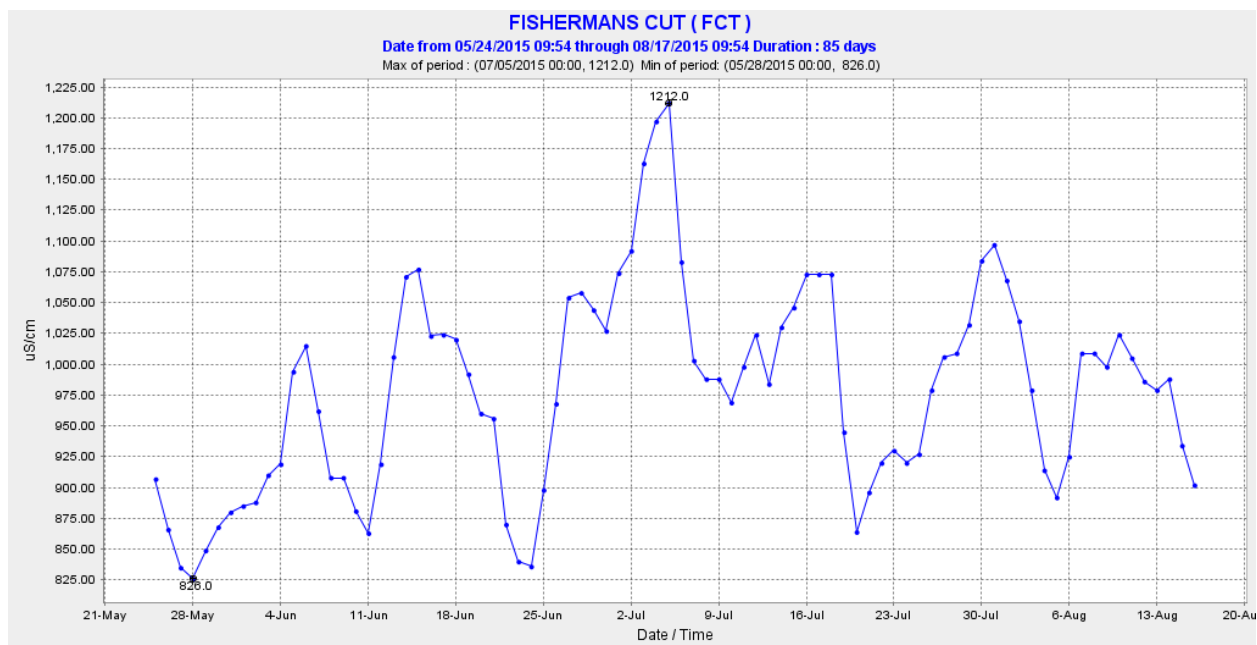
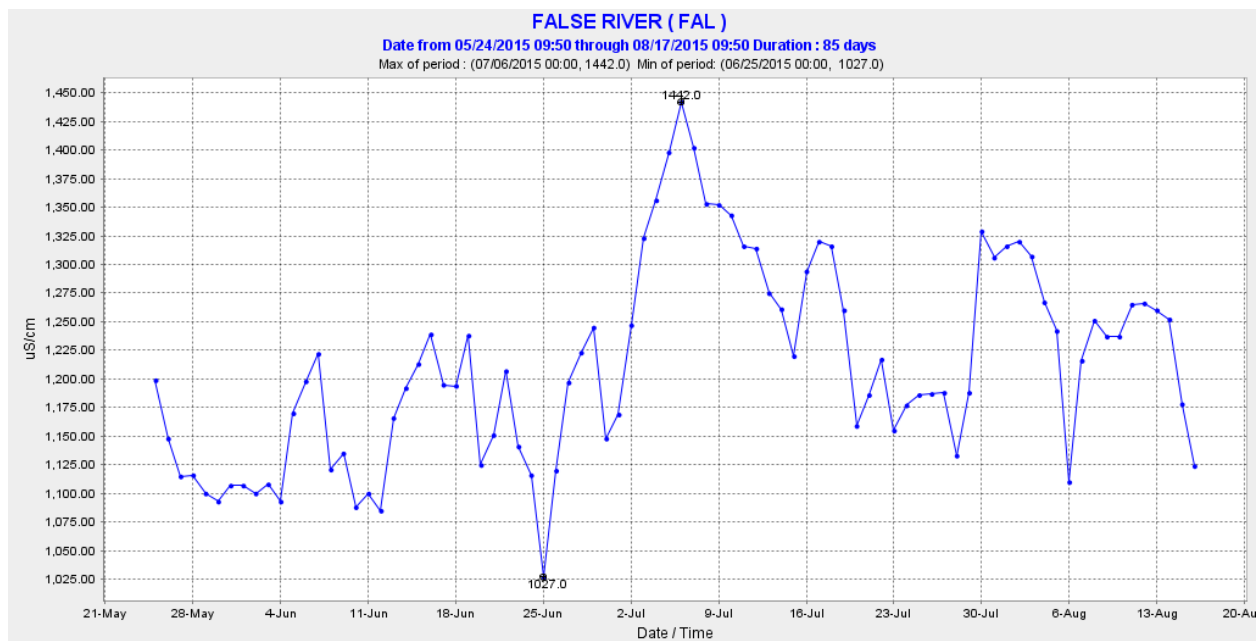
### Specific Conductivity

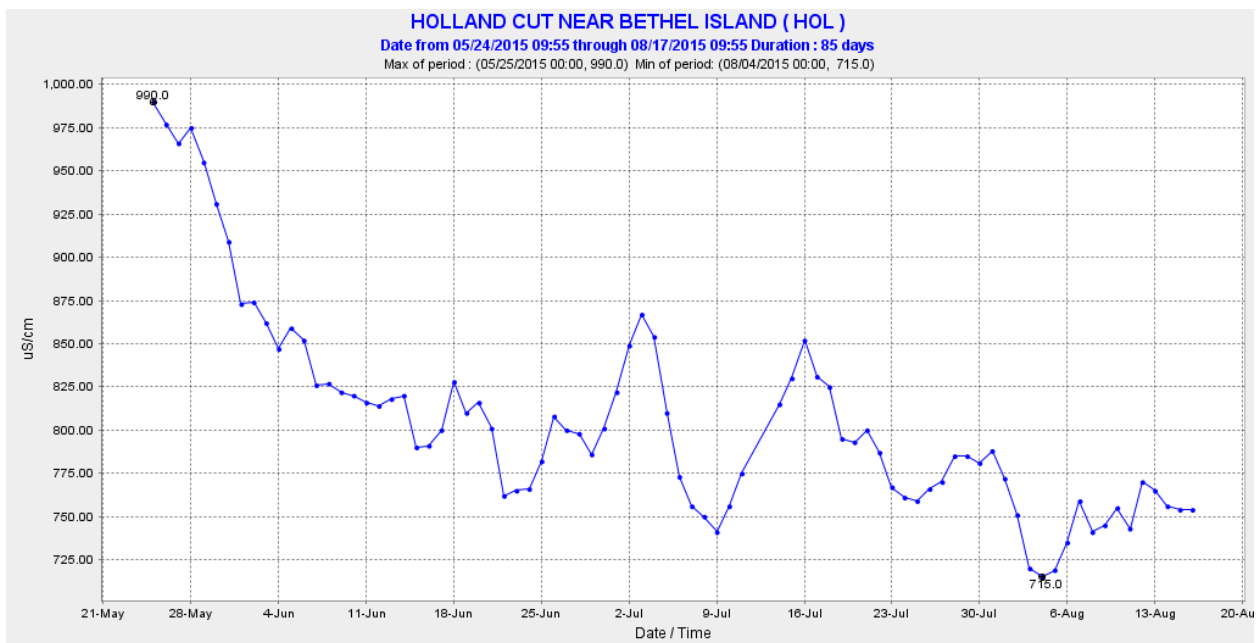
During the past week, average daily specific conductivity (EC) levels continued to trend downward. The San Joaquin River @ Jersey Point (SJJ) and Dutch Slough @ Jersey Island (DSJ) stations both had average daily EC levels near 2,000  $\mu\text{S}/\text{cm}$  at the beginning of the week and both dropped to 1675  $\mu\text{S}/\text{cm}$  by August 16th. EC readings at both the False River (FAL) and Fisherman's Cut (FCT) stations dropped by 100  $\mu\text{S}/\text{cm}$  during the week. EC readings at the Holland Cut near Bethel Island (HOL) stayed level for the duration of the week.

<sup>1</sup> All data in this report and subsequent weekly reports posted to California Data Exchange Network (CDEC) are preliminary and have not yet been validated.

Daily average EC values for five stations in the vicinity of the EDB:





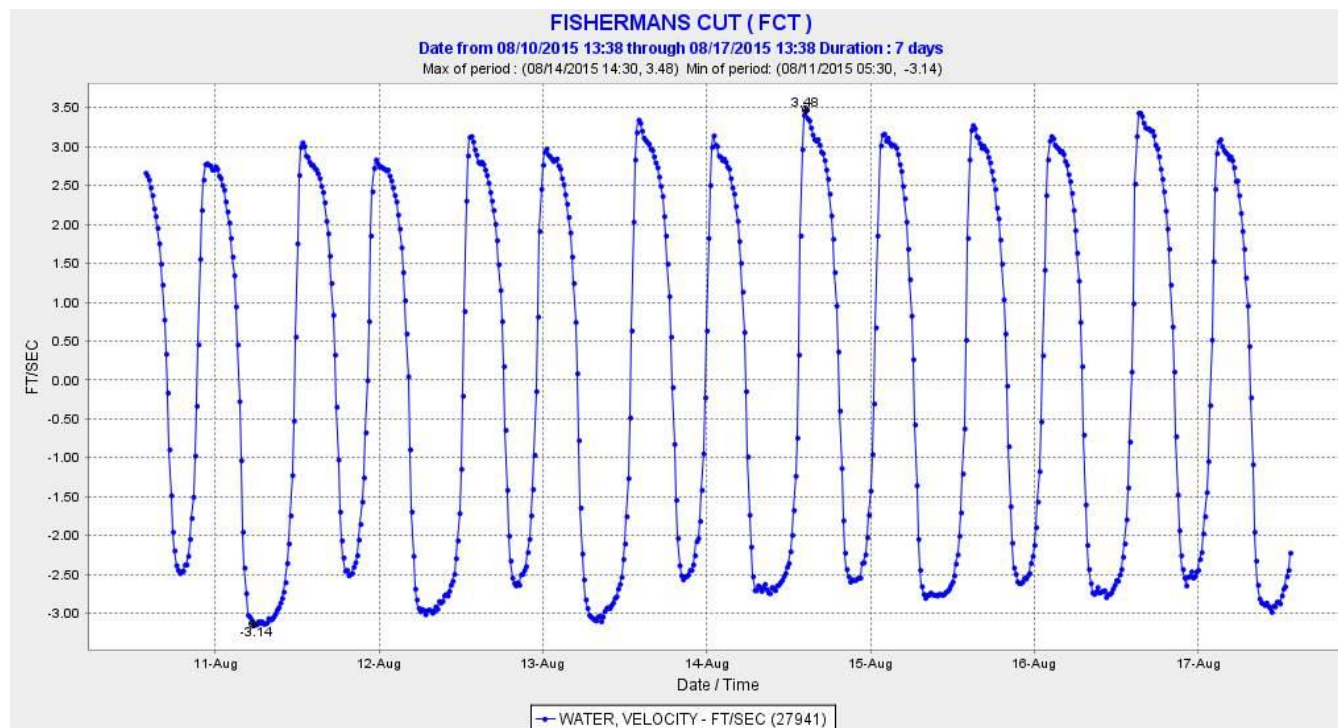


## **Flow and Velocity**

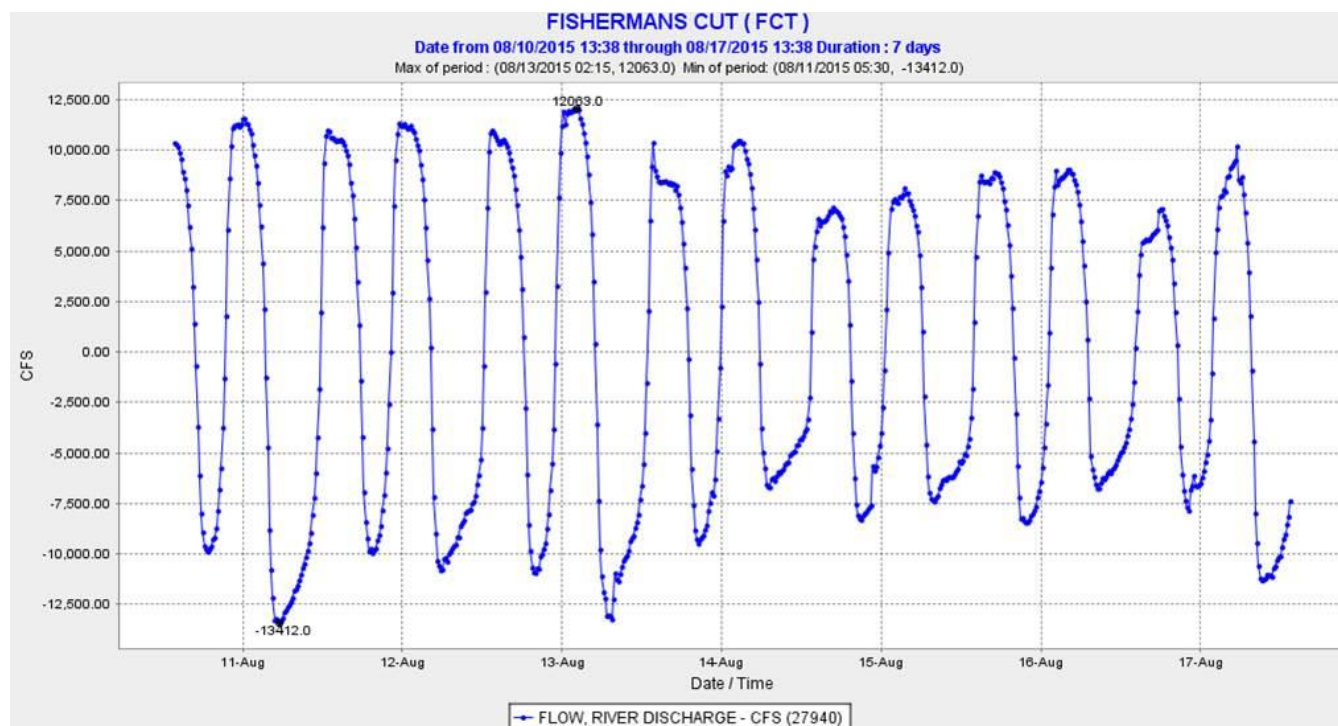
Fisherman's Cut experienced a spring tide during the week of August 10 through August 16. Peak water velocities at the FCT flow station varied between +3.48 ft/s (8/14/15 at 14:30) and – 3.14 ft/s (8/11/15 at 05:30). While the barrier is in place, positive water velocities measured at this station refer to water flowing into Fisherman's Cut southward from the San Joaquin River. Thus, last week's peak water velocity of +3.48 ft/s occurred during a flood tide. Flows appear to have varied between +12,063 cfs (8/13/15 at 02:15) and –13,412 cfs (8/11/15 at 05:30) indicating a higher peak flow during an ebb tide. These peak flows (and the peak ebb velocity) may be erroneous as our vertical beam filtering algorithm is still having some issues with water hyacinth and with the erratic behavior of our external pressure transducer. There appears to be some under-calculated flows from August 14 – 16 due to continued filtering algorithm issues. We've been working on a program repair over the last couple of weeks and may have an answer shortly. In the meantime, we've turned off the algorithm starting today (Monday August 17 around noon). Quality controlled Fisherman's Cut flow and velocity data can be obtained from the Water Data Library (WDL) using the station code B95050Q. Note that the WDL data is usually not up-to-date as the system gets updated every Thursday. Below are the velocity and flow plots for the last week of data.



15-Minute velocities for FCT in the vicinity of the emergency drought barrier:



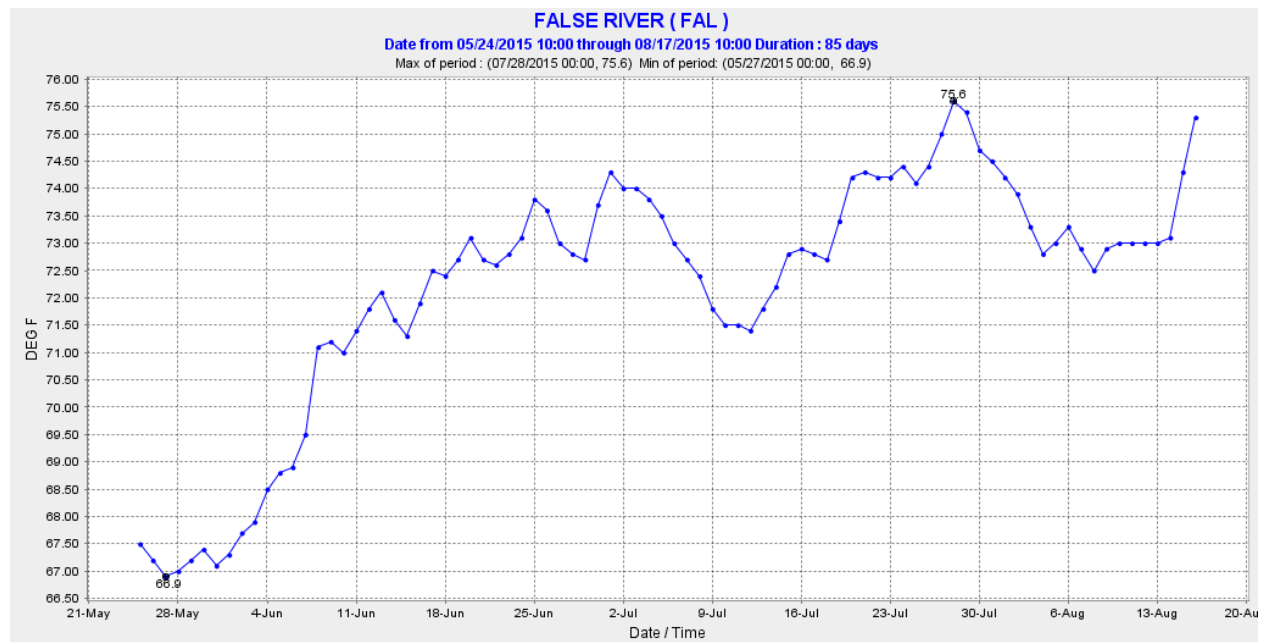
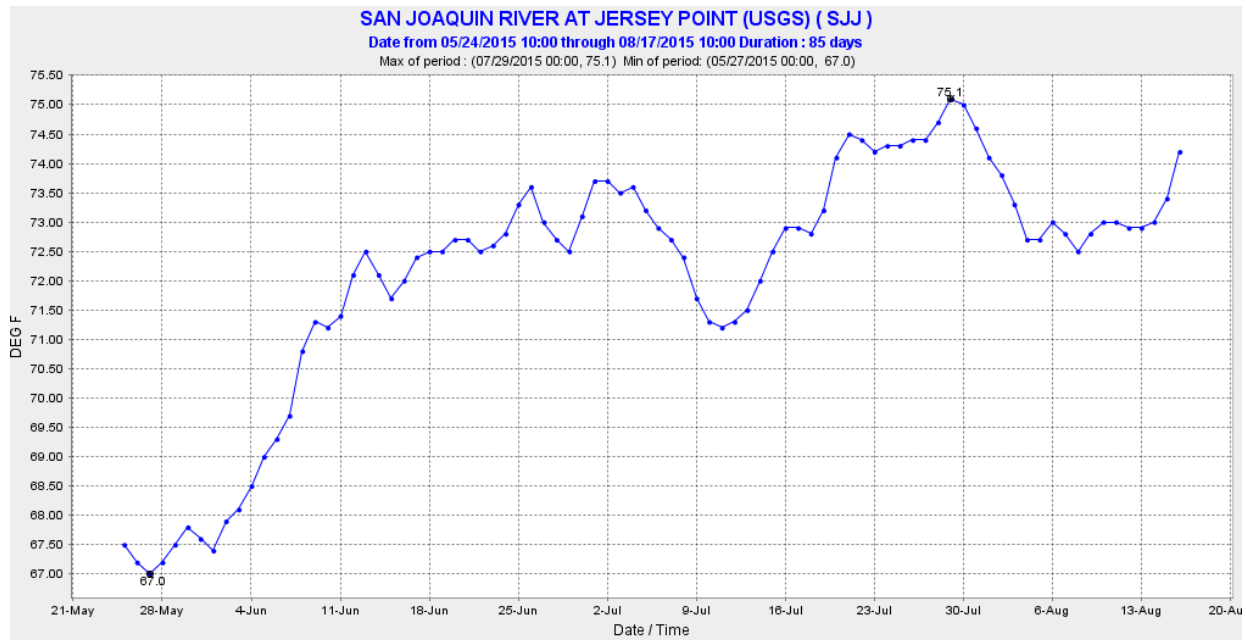
15-Minute flows for FCT in the vicinity of the emergency drought barrier:



## Water Temperatures

Temperatures rose nearly 2 °F at both the FAL and SJJ stations. Much of that change occurred during the weekend's hot spell.

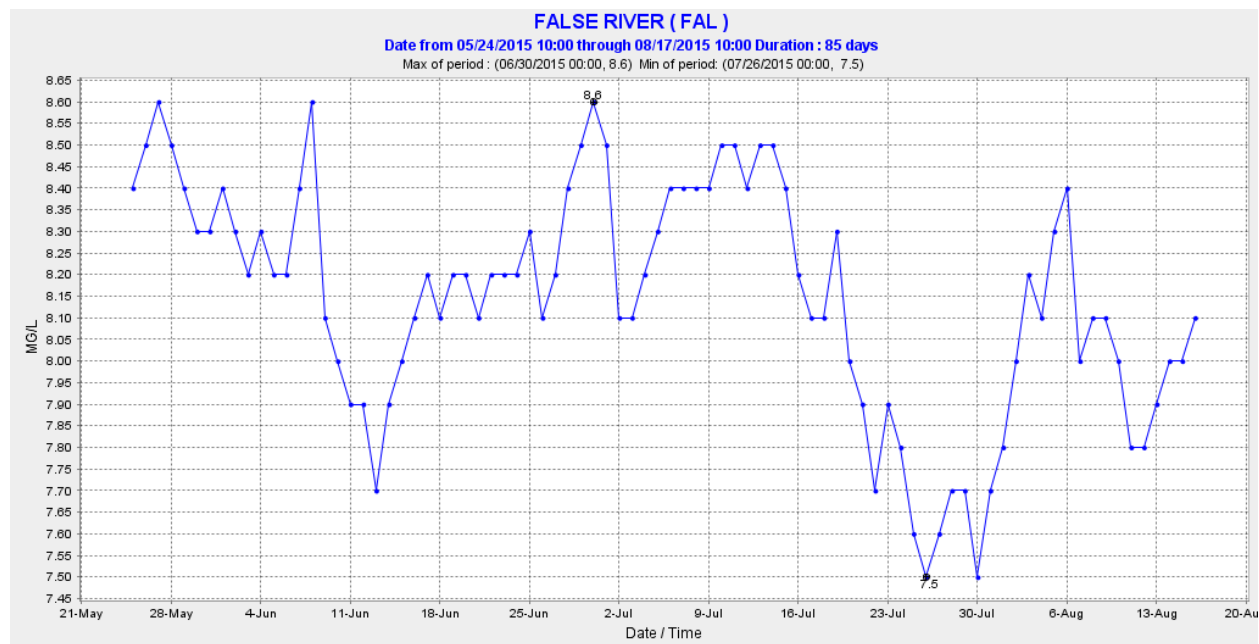
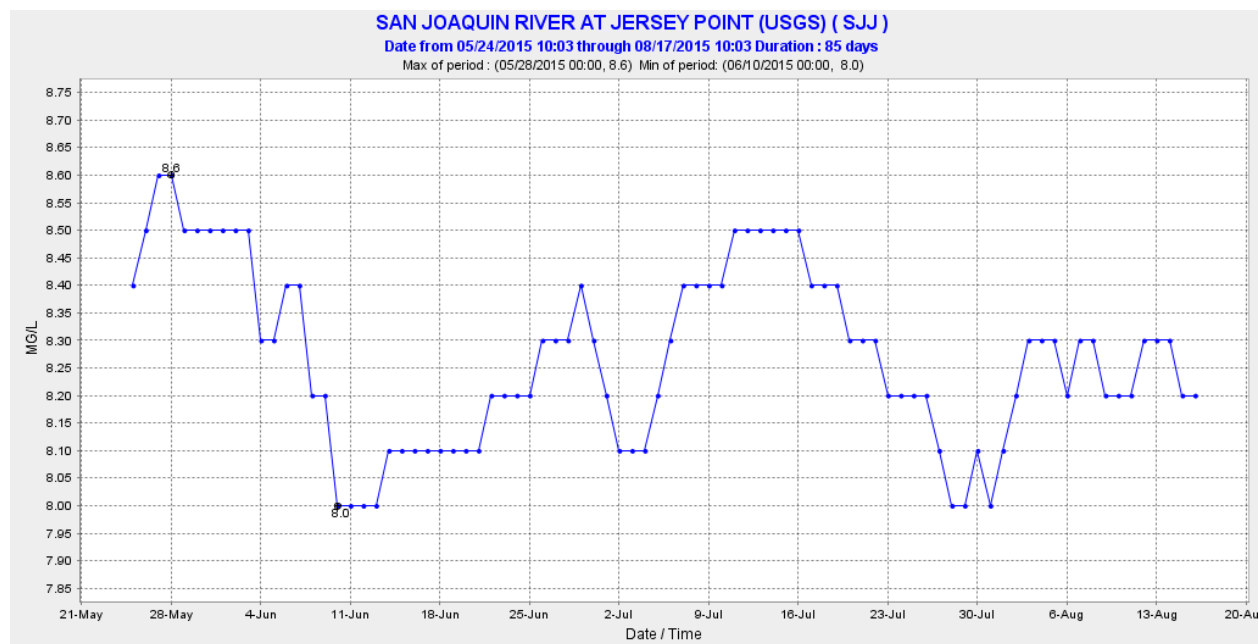
Daily average temperature for stations immediately upstream and downstream of the EDB:



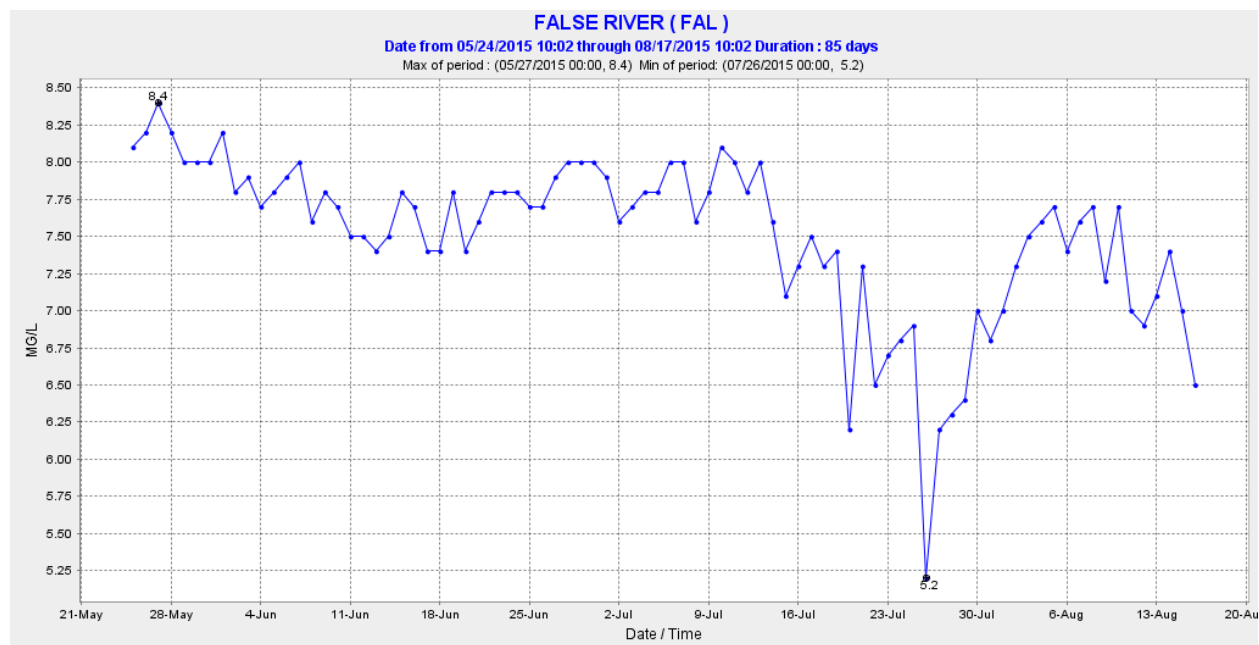
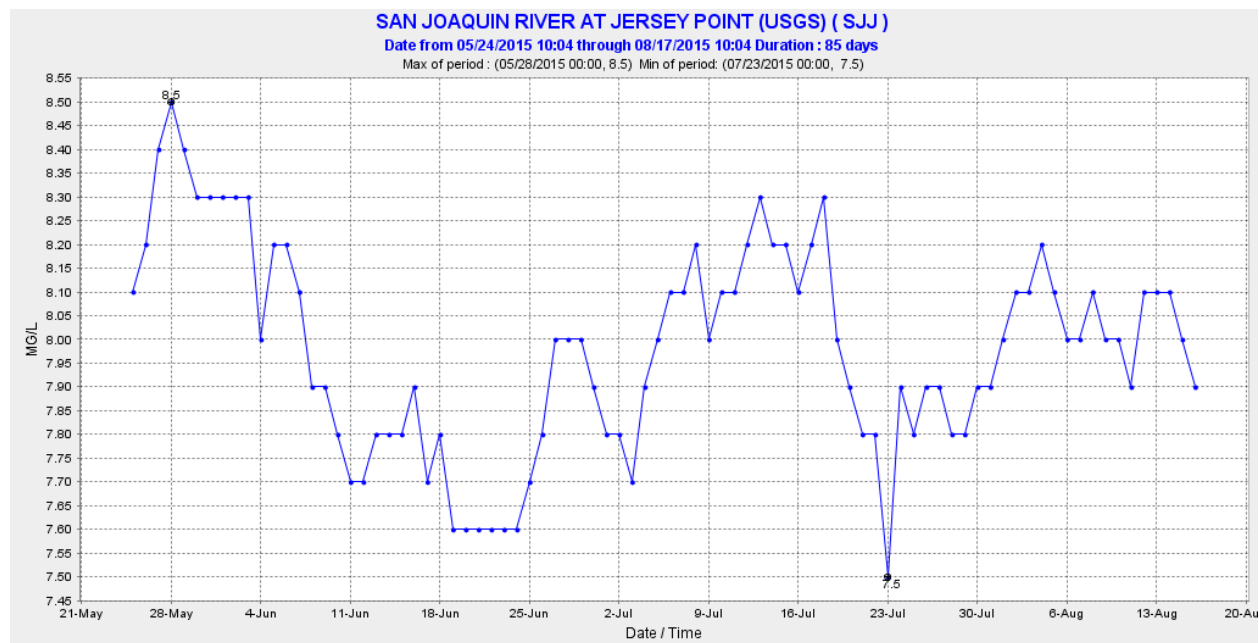
## Dissolved Oxygen

Average daily dissolved oxygen (DO) varied only slightly during the week and remained above 7.5 mg/L at the FAL and SJJ stations. Minimum DO levels for the two stations remained well above the 5.0 water quality criterion for aquatic life, as they have remained since the barrier was installed.

Daily average DO for stations immediately upstream and downstream of the EDB:



Daily minimum DO for stations immediately upriver and downriver of the EDB:





Summary of EC data ( $\mu\text{S}/\text{cm}$ ) by station for the period of August 10 through August 16, 2015.

Station	Mean	Median	Minimum	Maximum	Area
Suisun Bay - Cutoff near Ryer (RYC)	19419	19411	14551	24677	Grizzly Bay to Lower Sac River
Grizzly Bay (GZL)	21745	21552	18568	24887	
Sacramento River near Sherman Island (SSI)	5062	4956	980	10452	
Dutch Slough @ Jersey Island (DSJ)	1827	1770	1520	2500	Dutch Slough
San Joaquin River @ Jersey Point (SJJ)	1936	1710	1040	4170	Vicinity of EDB
Three Mile Slough at San Joaquin River (TSL)	1697	1615	1020	3240	
San Joaquin River @ Twitchell Island (TWI)	1345	1310	712	2474	
Fisherman's Cut (FCT)	975	902	672	1584	
False River (FAL)	1227	1240	1060	1380	
Bethel Island near Piper Slough (BET)	948	945	927	974	Frank's Tract
Franks Tract Mid (FRK)	809	826	751	857	
Old River near Frank's Tract near Terminous (OSI)	658	649	575	824	
Holland Cut near Bethel Island (HOL)	756	734	682	966	
Sacramento River downstream of Isleton (SOI)	297	248	140	970	North Delta/Cache Slough
Steamboat Slough near Sacramento River (SXS)	190	164	140	495	
Cache Slough @ Ryer Island (RYI)	189	182	171	350	
Liberty Island @ Approx Cntr S End (LIB)	184	183	171	236	
Miner Slough (MIR)	163	160	139	223	
Steamboat Slough downstream of Sutter Slough (SUS)	153	156	140	179	
Miner Slough @ HWY 84 Bridge (HWB)	154	155	137	179	

Mean specific conductance ( $\mu\text{S}/\text{cm}$ ) for the period of August 10 through August 16, 2015.

